

1.3.82. E-ROTA

Coperet Ph.

100% full dimensional measurement of tubes, thickness, OD, ID, Eccentricity and Ovality, is now possible without rotating either the tube or an Ultrasonic transducer. E-rotar principle is to apply to the tube measurements the same principle as used for sampling electric signals (Nyquist-Shannon theorem), which says:

If the highest frequency contained in a signal is “F”, so it is enough to sample it with a sampling frequency of “2F”. That means, according to this condition, we can have “2F” static probes around the tube to correctly sample its thickness and diameter, and then, calculate the missing points by interpolation. In-line evaluations realized in priority on zirconium tubes gives excellent results with 12 fixed transducers compare to those from rotating heads. On-line e-rotar systems with minimum 6 transducers around thick precision tubes allow to get full dimensional data without heavy tube rotating benches. The e-rotar main market is naturally the replacement of existing rotary heads. Whatever the number of channels is, the e-rotar offers a considerable advantage in Price, Speed, Setting time and Low Maintenance cost.